REMARKS/ARGUMENTS

Claims 1-26 stand rejected in the outstanding Office Action. Claims 1 and 14 have been amended and therefore claims 1-26 remain in the application.

The Examiner's consideration of the prior art submitted with Applicants' previously filed Information Disclosure Statement is very much appreciated. Additionally, the Examiner's indication of PTO acceptance of the previously filed formal drawings is appreciated.

Claims 1-26 stand rejected under 35 USC §112 (second paragraph) as being indefinite. Specifically, the Examiner's allegation on page 2, section 3(a)(i), is that claim 1 is unclear as to what structure detects "if one or more interrupt event has occurred." As originally submitted, the claim clearly specified "an interrupt controller" which "upon completion of said first interrupt handling program, [detects] if one or more second interrupt events . . . has occurred." Thus, the structure for accomplishing the detecting is the specified interrupt controller.

Applicants have amended claim 1 to more positively recite "an interrupt controller . . . for detecting if one or more second interrupt events . . . ." This amendment, along with minor format changes, is believed to place claims 1 and 14 more in condition for allowance under conventional U.S. PTO practice, although the originally submitted language is believed to clearly meet the requirements of 35 USC §112 (second paragraph). It should be noted that, in reviewing the original claim language, one of ordinary skill in the art would see nothing at all indefinite, as it is clearly the "interrupt controller" which accomplishes the specified functional interrelationship. Any further rejection of claims 1 and 14 is respectfully traversed.

Additionally, the Examiner indicates that claim 1 does not clearly indicate "what is the step the system will take if there are lower priority interrupts." This is not Applicants' claimed

invention and there is no requirement that an applicant recite all possible events or how all possible options are taken care of in a particular invention. Applicants' claim 1 is defined by the structures and interrelationship between structures which are specified in the claim and are not otherwise limited. There is simply no statutory or federal rule or MPEP requirement that Applicants identify all actions that a claimed structure could do, especially with "lower priority interrupts" Therefore, the allegation that the claim is somehow indefinite without specifying that additional operation simply does not rise to the level of a lack of support rejection under 35 USC §112 (second paragraph) and any further rejection thereunder is respectfully traversed.

The Examiner, in sections 3(a)(ii) and 3(a)(iv), rejects claims 3 and 16, alleging that it is unclear what is meant by "execution of a non-interrupt triggered program." As the language of claims 3 and 16 clearly states, the first interrupt event is either "execution of a non-interrupt triggered program" or "execution of an active interrupt handling program . . . ." The Examiner's interpretation, i.e., that the first of these is "execution of a program that is not an interrupt request or interrupt process" is correct, and this is the clear understanding that one of ordinary skill in the art would have reading the claim as well. The subject matter of claims 3 and 16 is clear to those of ordinary skill in the art just as it is clear to the Examiner in view of his statement in the Official Action. Therefore, no further clarification of claims 3 and 16 is believed needed.

Claims 1-7, 10-12, 14-20 and 23-25 stand rejected under 35 USC §103 as being unpatentable over Miu (U.S. Patent 4,488,227) in view of Ishimoto (U.S. Patent 5,410,715). In section 6 on page 3 of the Official Action, the Examiner first suggests that "Miu teaches the invention substantially as claim [sic] . . . ." However, the Examiner later admits in section 7 on

page 4 of the Official Action that "Miu did not teach detecting one or more higher priority interrupts during the execution of the first interrupt."

In view of the Examiner's admission that Miu does not teach "detecting" (the claim as amended states "an interrupt controller . . . for detecting if one or more second interrupt events having a higher priority than said processing that was interrupted by said first interrupt event has occurred during execution of said first interrupt handling program"), there can be no disclosure in Miu of the claimed interrelation clauses (see claim 1, subsections (i) and (ii) which are part of the claimed "interrupt controller").

Thus, in view of the Examiner's admission in section 7, the Examiner's allegation that Miu teaches the invention substantially as claimed, i.e., the "interrupt controller" including clauses (i) and (ii), is clearly inconsistent. The Examiner's admission, that the Miu reference only teaches "processing logic" recited in Applicants' independent claim and does not teach the claimed "interrupt controller," confirms that the subject matter of claim 1 is not taught in the cited prior art reference.

The Examiner goes on to allege that Ishimoto discloses detection of one or more second interrupt events upon completion of said first interrupt handling program. Actually, in Ishimoto, each interrupt is assigned priority information which indicates the priority level for that interrupt. When an interrupt request is received, the priority information for the interrupt request is stored in a priority designation register (as per column 4, lines 45-51 of Ishimoto). The priority information stored in Ishimoto's register is compared with an "in-service priority" (see column 4, lines 65-69) which is the priority of an interrupt processing being executed by the CPU (column 4, lines 31-33). If the priority stored in the priority designation register is higher than

(or in some cases, the same as) the in-service priority, then the interrupt request is acknowledged (see column 4, lines 2-16) and then processed. Accordingly, Ishimoto detects whether or not interrupt events having a higher priority than the processing which is currently being executed by the CPU have occurred.

Ishimoto teaches detecting if one or more second interrupt events having a higher priority than the first interrupt event has occurred. This is clearly different from the claimed invention in which the interrupt controller detects if "one or more second interrupt events having a higher priority **than said processing** that was interrupted by said first interrupt event has occurred" (emphasis added). In Ishimoto, it is the detecting of a second interrupt having a higher priority **than the first interrupt**, whereas in the claim, it is detecting whether the second interrupt has a higher priority **than the processing** which was interrupted by the first interrupt event.

Not only does Ishimoto fail to teach detection of a second interrupt having higher priority than "said processing" (rather than the "first interrupt event" itself), it fails to render the claimed interrelationship obvious, and, instead, would lead one of ordinary skill in the art away from Applicants' claimed invention (i.e., it would lead to determinations of whether the second priority is higher **than the first interrupt**).

In view of the above, even if Miu and Ishimoto were combined, they would not disclose all of the recited elements and interrelationships in Applicants' independent claims 1 and 14 and therefore any further rejection thereof or claims dependent thereon in view of the Miu/Ishimoto combination is respectfully traversed. Even if combined, the fact that Ishimoto teaches away from the claimed combination of elements clearly rebuts any *prima facie* case of obviousness.

In section 20 on page 7 of the Official Action, claims 8, 9, 21 and 22 stand rejected under 35 USC §103 as unpatentable over the Miu/Ishimoto combination further in view of McMahan (U.S. Patent 5,706,491). It is noted that claims 8, and 9 ultimately depend from claim 1 and claims 21 and 22 ultimately depend from claim 14. Accordingly, because claims 1 and 14 are not obvious in view of the Miu/Ishimoto combination and therefore patentable thereover, claims 8, 9, 21 and 22 are patentable over the Miu/Ishimoto combination.

The Examiner does not allege that the McMahan reference teaches the interrupt controller structure and interrelationships claimed in independent claims 1 and 14 which are missing from the Miu/Ishimoto combination. Accordingly, even if Miu/Ishimoto were combined with McMahan, the combination would not render obvious the subject matter of claims 1 and 14 or claims 8, 9, 21 and 22 dependent thereon. Accordingly, any further rejection of claims 8, 9, 21 and 22 under 35 USC §103 over the Miu/Ishimoto/McMahan combination is respectfully traversed.

In section 26 on page 8 of the Official Action, claims 13 and 26 stand rejected under 35 USC §103 as unpatentable over the Miu/Ishimoto combination further in view of Raasch (U.S. Patent 5,237,692). It is noted that claims 13 and 26 ultimately depend from claims 1 and 14, respectively. Accordingly, because claims 1 and 14 are not obvious in view of the Miu/Ishimoto combination and therefore patentable thereover, claims 13 and 26 are patentable over the Miu/Ishimoto combination.

The Examiner does not allege that the Raasch reference teaches the interrupt controller structure and interrelationships claimed in independent claims 1 and 14 which are missing from the Miu/Ishimoto combination. Accordingly, even if Miu/Ishimoto were combined with Raasch,

the combination would not render obvious the subject matter of claims 1 and 14 or claims 13 and 26 dependent thereon. Accordingly, any further rejection of claims 13 and 26 under 35 USC §103 over the Miu/Ishimoto/Raasch combination is respectfully traversed.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 1-26 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, he is respectfully requested to contact Applicants' undersigned representative.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____
Stanley C. Spooner
Reg. No. 27,393

SCS:kmm
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100